

# NEW AND RARE PALAEARCTIC TINEIDAE (LEPIDOPTERA)

BY

IOSIF CAPUSE

*Bucharest, Rumania*

In the present paper which forms a continuation of my studies on the family Tineidae, descriptions are presented of a new genus, two new species and one new subspecies. Furthermore remarks are made on morphological characters of some other species not dealt with in the literature so far.

The systematic arrangement of the material is that proposed by G. PETERSEN.

The author wishes to express his thanks to Dr. A. DIAKONOFF, who kindly read the manuscript of the present paper.

## NEMAPOGONINAE

**Cephimallota libanotica** Petersen, 1959  
(Fig. 1)

Head orange-yellow. Antennae brown-yellow. First antennal joint nearly twice longer than broad, and four times longer than second joint. Labial palpi brown-yellow. Maxillary palpi somewhat longer than labial, yellowish. Galeae not surpassing half length of labial palpi. Thorax grey-brown, tegulae concolorous, with a few lighter scales on posterior edge. Forewing without pattern, blackish brown, darker on the underside, posterior half lighter. Upper and under side of both wings with a faint violaceous gloss. Legs yellowish-brown with yellow bands on ends of tarsal joints.

In one of the specimens examined the colour and shape of the wings are asymmetrical: in the right forewing the apex is a little more truncate, while near it there is a rectangular spot, lighter than remainder of wing.

Male genitalia. Tegumen and vinculum forming a large ring. Vinculum with a rather long slender saccus. In dorsal view uncus with two cusps, reaching beyond posterior margin of valvae. A deep median excavation beset with numerous hairs. Arms of gnathos long-pointed. Valvae small, robust, densely haired. Anellus similar to that in *C. simplicella* (H.-S.).

Examined material. 1 ♂, Rumania, Baneasa wood, Bucuresti, 29.VIII.1960 (author); 1 ♂, the same locality, 15.VII.1961 (Dr. A. POPESCU-GORJ); 2 ♂, Ineu (coll. L. DIOSZEGHY); 1 ♂, Baile Herculane, 7.VII.1964 (author); 2 ♂, Ciresu-Pestera Topolnita, 27.VI.1964 (author).

Distribution. Lebanon, Greece (Peloponese), Yugoslavia (Macedonia), Albania, and Rumania.

## TINEINAE

*Tinea murariella* Staudinger, 1859  
(Fig. 2—3)

Head yellow; antennae brown. Labial palpi blackish-brown with a few light scales. Thorax and tegulae blackish-brown. Forewing with a blackish-brown ground colour. Three spots darker than ground colour: two in basal third and one in middle of wing. Hindwing grey-brown. Legs brown.

Male genitalia resembling those of *T. leonhardi* Pet., but differing by stouter aedeagus, absence of small hair-like cornuti, and presence of spines on large cornuti. In *T. murariella* Stgr. distal end of the valva is strongly narrowed; aedeagus 2,7  $\times$  longer than valva. Tegumen, uncus, and gnathos normal.

Examined material. 1 ♂, Rumania, Ciungetu, 29.VII.1962 (D. DANCAU).

Distribution. Spain, southern France, Rumania.

According to PETERSEN (1959b : 569) *T. murariella* Stgr. is a western Mediterranean element while *T. leonhardi* Pet. is an eastern Mediterranean one. The occurrence of the species in Rumania proves that the actual range of *T. murariella* Stgr. is much wider than PETERSEN believed. Our present knowledge of the family Tineidae, however, does not allow of a delimitation of the geographical range of the species, many regions being insufficiently studied.

*Tinea flavescentella* Haworth, 1828  
(Fig. 4—5)

Head yellow; base of antennae darker. Antennae light brown. Labial palpus yellow, externally and dorsally brown, its last joint dark brown with a lighter apex. Thorax yellow. Anterior half of tegulae brown, posterior yellow. Ground colour of forewing yellowish-brown. A dark brown spot on the base of costal edge. Marking similar to those in *T. pellionella* L., consisting of two hardly visible spots in basal half of wing and a well-defined spot at  $2/3$  of wing length. Terminal part of forewing darker in colour. Hindwing greyish-yellow. Legs yellow.

Female genitalia. Sterigma medially with a strong concavity separating two lobes with short, hairy, rounded posterior edges. Ostium bursae strongly broadened. Bursa copulatrix, an elongate sack with three equal signa, each signum with a dilated base provided with one hair.

In PETERSEN's revision (1957—1958) this species is characterized by the presence of four signa; the specimen examined by me has only three.

Examined material. 1 ♀, Rumania, Eforie Sud, Dobrogea Region, 30.VI.1962 (author).

Distribution. The species has been collected in England, Ireland, France, Germany, Italy, Yugoslavia (Dalmatia), Algeria, Turkey, and Rumania.

*Monopis nonimella* Zagulajev, 1955

This species is very similar externally to *M. imella* Hb. from which it can be distinguished only by the genital characters.

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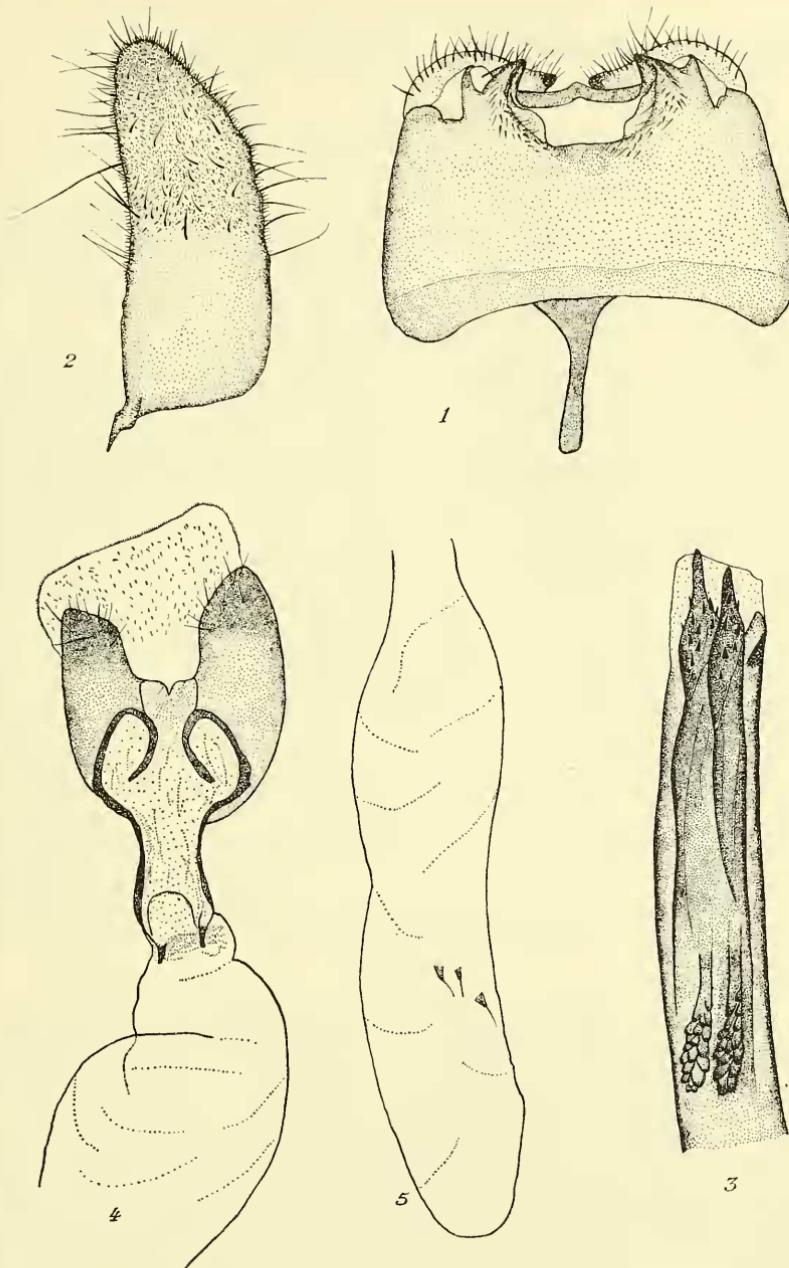


Fig. 1—5. Genitalia of Tineidae. 1, *Cephimallota libanotica* Pet., ♂, dorsal view of genitalia; 2, *Tinea murariella* Stgr., ♂ left valva; 3, the same, distal end of aedeagus; 4, *Tinea flavescentella* Hw., ♀, genitalia; 5, the same, bursa

Examined material. 1 ♂, Rumania, Eforie Sud, Dobrogea Region, 9.VII.1962 (author).

Distribution. USSR (Siberia, Kazakhstan, South Ural, Taganrog, Pskov), Yugoslavia (Montenegro), and Rumania.

### MEESSIINAE

Type-genus, *Meessia* Hofmann, 1898.

Head with long, slender antennae; usually both pairs of palpi well-developed; maxillary palpi absent in *Lichenovora* Pet. Second joint of labial palpus usually provided with variable number of rigid hairs. Wings elongate, lanceolate, with pointed apex. Markings of forewing in most species forming transverse bands or dots of diverse size and of a different colour, irregularly scattered.

In most genera of the subfamily there is a more or less marked reduction of venation. Thus in the forewing the whole length of the radial trunk or parts of it are feebly marked (e.g., *Ischnoscia*, *Lichenovora*, *Lichenotinea*, *Phereoeca*, etc.). In some genera (*Ischnoscia*, *Obesoceras*)  $R_2$  and  $R_3$ , and in other (*Infurcitinea*, *Gozmanytinea*, *Lichenotinea*, *Meessia*),  $R_4$  and  $R_5$  are pedunculate. Sometimes  $R_5$  (*Lichenovora*) or one of the median veins (*Obesoceras*, *Ischnoscia*) are missing. Veins  $A_1$  (*Agnathosia*, *Lichenotinea*, *Ischnoscia*, *Obesoceras*, *Infurcitinea*, *Gozmanytinea*) and  $A_3$  (*Celestica*) can be missing or weakly marked. Radiocubital cell, narrow and very elongate, is sometimes open (*Lichenovora*, *Phereoeca*).

The radial trunk in the hindwing is sometimes feebly marked or absent (*Lichenovora*, *Lichenotinea*, *Infurcitinea*, *Phereoeca*, *Celestica*); in some genera there are three median veins (*Lichenotinea*, *Infurcitinea*, *Gozmanytinea*, *Lichenovora*, *Phereoeca*), while in other there are only two (*Celestica*, *Ischnoscia*, *Obesoceras*, *Meessia*). In some genera the anal veins, generally feebly developed are present as a single vein (*Infurcitinea*, *Gozmanytinea*, *Meessia*), or as two veins (*Lichenovora*, *Obesoceras*, *Phereoeca*) or they may be missing (*Celestica*, *Ischnoscia*, *Lichenotinea*). The radiocubital cell in the hindwing is as a rule elongate and closed, at times open (*Lichenovora*, *Celestica*, *Lichenotinea*), seldom short and narrow (*Ischnoscia*). In some instances it includes the radial trunk (*Obesoceras*, *Meessia*).

Median spurs of hind tibiae on basal half more or less close to base.

For the genera of this subfamily only descriptions of the venation are given in the following pages; these data have either been spread in a number of separate publications or not described at all; the male genitalia, on the contrary, have been very well characterized by PETERSEN (1957—1964).

The male genitalia are characterized by more or less pronounced reduction of the uncus and gnathos, which in some instances can be missing altogether. Valvae developed, strongly specialized, sometimes asymmetrical (*Infurcitinea*). Vinculum strongly developed, very broad in some genera (*Lichenovora*, *Lichenotinea*) while in other it is narrow and has two tips (*Infurcitinea*), or a saccus of variable length and breadth (*Celestica*, *Agnathosia*, *Phereoeca*, *Montetinea*, *Meessia*, *Obesoceras*, *Gozmanytinea*, *Ischnoscia*, *Novotinea*). Aedeagus developed, usually with cornuti; in some genera the shape of aedeagus is very characteristic. Sometimes, e.g. in *Infurcitinea*, the anellus is strongly developed.

Since the female genitalia are known only in few members of this subfamily, it is not possible to characterize them at the present time.

The scanty data in the literature show that the larvae of the subfamily Meessiinae feed on lichens, and that the adults may be captured on rocks covered with lichens and at night at light.

The present subfamily includes the following genera: *Celestica* Meyrick, *Agnathosia* Amsel, *Phereoeca* Hinton & Bradley, *Montetinea* Petersen, *Meessia* Hofmann, *Obesoceras* Petersen, *Gozmanytinea* gen. nov., *Infurcitinea* Spuler, *Tineiforma* Amsel, *Lichenotinea* Petersen, *Ischnoscia* Meyrick, and *Novotinea* Amsel.

**Celestica** Meyrick, 1917

(Fig. 6—7)

Type-species, *Tinea angustipennis* H.-S., 1854.

Until now this genus stands isolated within the family Tineidae, showing affinities with some Meessiinae.

Wings very elongate and narrow. Sc of forewing terminating before middle of wing; radial veins all from the radiocubital cell. The distance between  $R_1$  and  $R_2$  about twelve times larger than that between  $R_2$  and  $R_3$ . The three median veins are present and well marked. Cubital trunk strong; cubital veins missing. One anal vein present, distinct throughout. Radiocubital cell very elongate, exceeding  $2/3$  of wing length, very narrow basally.

Sc of hindwing terminating beyond marginal half of costa. Basal half of radial trunk not evident. R well marked. Two median veins present. Cubital trunk curved and close to anal edge of wing.  $Cu_1$  and  $Cu_2$  present, short. All anal veins missing.

Only one species.

Examined material. 1 ♂, Poland, Oswiecim, 30.VII.1960 (S. TOLL) (*C. angustipennis*).

Distribution. Yugoslavia (Macedonia), Rumania, Central Europe, Netherlands, Denmark, Finland, England.

**Agnathosia** Amsel, 1954

(Fig. 8—9)

Type-species: *Tinea mendicella* Hübner, 1796.

Vein Sc of forewing terminating on costa before middle. Radial trunk feebly marked. All five radial veins independently ending on costal edge of wing. Distance between bases of veins  $R_1$  and  $R_2$  about  $3.5 \times$  as large as that between bases of veins  $R_2$  and  $R_3$ . Veins  $R_4$ ,  $R_5$ ,  $M_1$  and  $M_2$  weak along a short distance from base. Three median veins. Cubital trunk and two cubital veins well marked.  $A_1$  feebly marked, not reaching edge of wing,  $A_2$  strongly marked, reaching that edge;  $A_3$  absent.

Costal edge of hindwing with a convexity; Sc terminating beyond half of wing. Radial trunk feebly marked and radial vein with a weak small portion from base, remaining part strong. Bases of  $M_1$  and  $M_2$  close together. Cubital trunk and cubital veins well marked. Only one anal vein apparent, but weak, reaching to edge of wing.

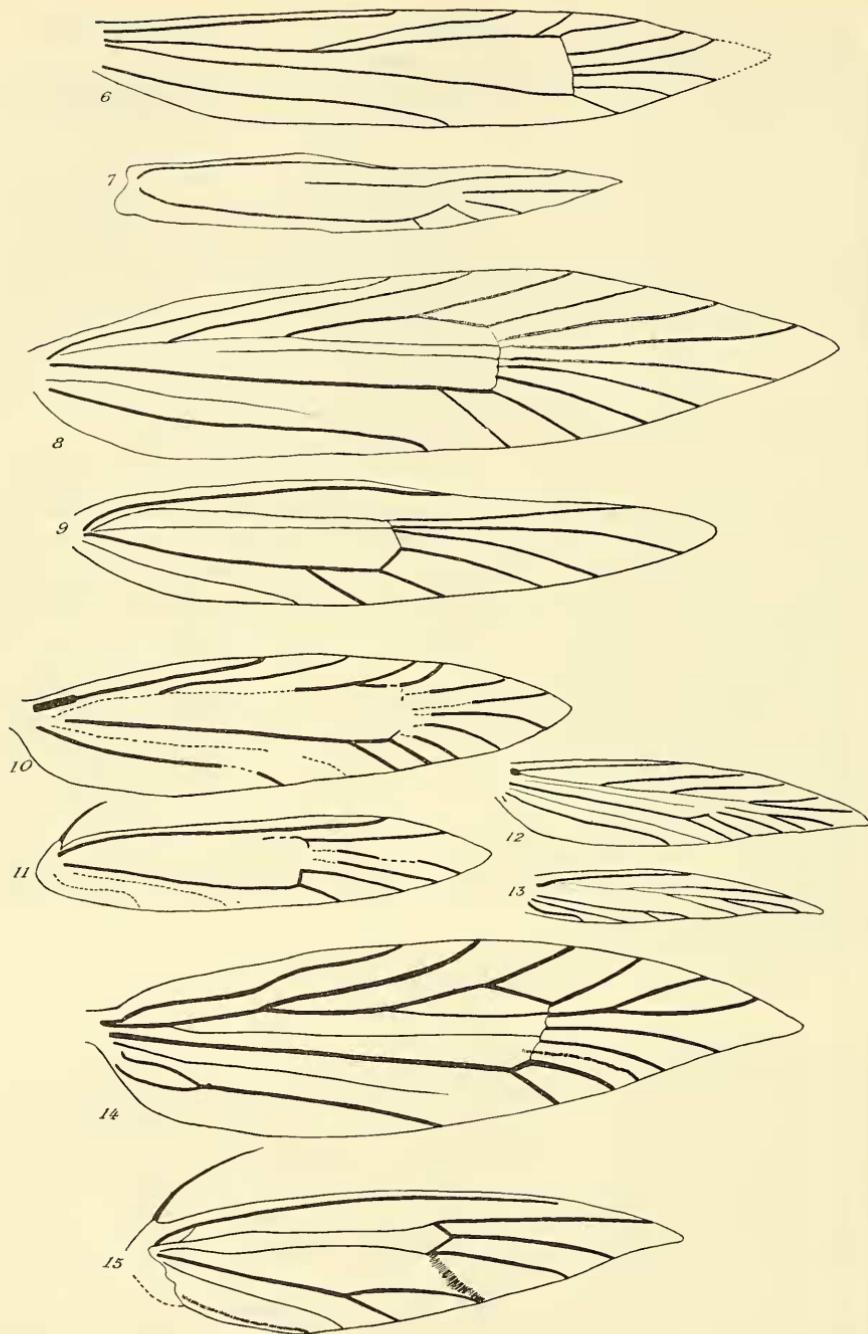


Fig. 6—15. Venation of Tineidae. 6—7, *Celestica angustipennis* (H.-S.); 8—9, *Agnathosia mendicella* (Hb.); 10—11, *Phereoeca uterella* (Wlsm.) (after Hinton & Bradley); 12—13, *Lichenovora rhenania* Pet.; 14—15, *Meessia vinculella* (H.-S.) (after Spuler)

Only one species.

Examined material. 1 ♂, Rumania, Suceava (I. TABACARU).

Distribution. Finland, Central Europe, and Rumania.

**Phereoeca** Hinton & Bradley, 1956  
(Fig. 10—11)

Type-species, *Tineola uterella* Walsingham, 1897.

Vein Sc in forewing ending in middle of costal margin. Radial trunk feebly marked at  $\frac{2}{3}$ . All radial veins arise independently from radiocubital cell. Diverse portions of bases  $R_4$ ,  $R_5$ ,  $M_1$ ,  $M_2$  and  $M_3$  weak.  $A_1$  ill-developed,  $A_2$  weak in distal portion,  $A_3$  absent.

Sc of hindwing very long, ending at  $\frac{4}{5}$  of costa. Radial trunk absent. R distinct.  $M_1$  and  $M_2$  with a weak base.

The genus includes four species, *Ph. uterella* (Wlsm.), *Ph. allutella* (Rbl.), *Ph. pachyspila* (Meyrick), and *Ph. walsinghami* (Busck).

Distribution. Canaries, Madeira, Ceylon, India, West Indies, and Florida.

**Lichenovora** Petersen, 1957  
(Fig. 12—13)

Type-species, *Lichenovora rhenania* Petersen, 1962 (*Lichenovora nigripunctella* Petersen, 1957, nec Haworth, 1828).

Two species belong to the genus, viz. *L. nigripunctella* (Hw.) and *L. rhenania* Pet.

Examined material, 1 ♂, *L. rhenania* Pet., Rumania, Bucuresti.

Distribution. England, Central Europe, Spain, Sicily, Yugoslavia (Dalmatia), Bulgaria, and Rumania.

**Lichenovora rhenania** Petersen, 1962

This species is hardly distinguishable externally from *L. nigripunctella* (Hw.).

Head light yellow. Antenna to  $\frac{3}{4}$  of wing. First two antennal joints light yellow, flagellum yellowish-brown. First antennal joint  $2\frac{1}{5}$  times longer than broad; second joint  $2\frac{1}{2}$  times shorter than first. Galeae and maxillary palpi absent. Labial palpi developed, 3-jointed; last joint pointed, equal to  $\frac{2}{3}$  of second. Pear-shaped sensorial papilla of last joint of labial palpi with 3 short hairs on surface.

Ground colour of forewing light yellow. Brown markings forming spots and bands situated as follows: one spot at costal margin, followed by three faint spots, one beneath the other, in the shape of an interrupted band; near middle of wing there is a band broadened medially and at the ends along wing edge; a similarly shaped band at  $\frac{2}{3}$  from wing base, broader, followed by a small spot in the vicinity of costal margin; wing apex likewise brown. Cilia of forewing light yellow. Hindwing and cilia whitish-yellow. Forewing under side ochreous-yellow, hindwing much lighter.

Forewing with vein Sc ending on costal margin before middle of wing. Radial trunk and  $A_1$  throughout, as well as bases of  $R_{3+4}$  and  $M_{1+2}$ , are less developed.

Radial veins to costa.  $R_3$  and  $R_4$  and  $M_1$  and  $M_2$  stalked.  $A_2$  distinct throughout, reaching edge of wing.  $A_3$  very short, hardly visible. Radiocubital cell  $2/3$  of wing length, its distal end very faint. Hindwing with Sc to beyond half of costa. Radial trunk and bases of R,  $M_1+2$  and  $M_3$  hardly visible. Radiocubital cell open, median veins running from radial trunk.  $Cu_1$  continuing as a distinct cubital trunk.  $Cu_2$  short.  $A_1$  reaching edge of wing;  $A_2$  and  $A_3$  parallel. Legs brown-yellow.

Examined material. 1 ♂, Rumania, Bucuresti, 27.VIII.1958 (author).

Distribution. Germany, Rumania.

In a previous paper (CAPUSE, 1963) I recorded *L. nigripunctella* (Hw.) as new for the Rumanian fauna, judging from PETERSEN's description (1957: 345) of the genitalia. It appeared to be *L. rhenania* Pet., described by the same author at the end of 1962, which description I received after the publication of my paper.

Meessia Hofmann, 1898  
(Fig. 14—15)

Type-species, *Tinea vinculella* H.-S., 1850.

Forewing with vein Sc to before middle of costa.  $R_4$  and  $R_5$  stalked.  $M_3$  absent.  $A_1$  weak, not reaching edge.  $A_2$  and  $A_3$  free at base, then united.

Hindwing with Sc long. Radial trunk ill-defined throughout. Cell very narrow, with radial and median trunks. R,  $M_1$  and  $M_2$  well marked;  $M_3$  absent. Cubital trunk strong, distally furcate. One single weak anal vein.

The following species have been assigned to *Meessia*: *M. vinculella* (H.-S.), ? *M. vinctella* (H.-S.), *M. pachyceras* Wlsm., *M. richardsoni* Wlsm., *M. klimeschi* Ams., *M. nerviella* Ams., *M. mensella* Wlsm., *M. leopoldella* (Cst.), *M. oberthurella* (Mill.), *M. nigraella* Mar., *M. alberti* Ams., *M. gallica* Pet., and the following new species.

Examined material. 1 ♀, *M. herculanella* spec. nov.

Distribution. Central Europe, England, Iberian Peninsula, France, Italy, Corsica, Sicily, and Rumania.

Meessia herculanella spec. nov.  
(Fig. 16—18)

Holotype: 1 ♀, Rumania, Baile Herculane, Orsova district, Banat Region, 8.VII.1964 (author). GS. no. 956. In the author's collection.<sup>1)</sup>

Head yellowish-white. Antennae ringed brown and yellowish-white; brown basal rings of joints narrower than yellowish-white apical ones.

Forewing black-brown with two broad white bands not reaching dorsum but exceeding half of wing breadth, from  $1/3$  and  $2/3$  of costa, respectively; anterior band narrowest. Fringes concolorous with ground colour, with white tips. Hindwing dark brown.

Female genitalia. Posterior ends of apophyses anteriores attached to a narrow, well sclerotized ring-shaped 9th segment; broader dorsally. This ring is open ventrally, as usual, interrupted by the colliculum. Ostium bursae large, continued

<sup>1)</sup> After the present paper was sent to press, I received through the kindness of Dr. F. KASY of the Vienna Museum, 5 ♂ and 1 ♀ from Baile Herculane, all belonging to this species.

by a well-sclerotized, relatively long colliculum. Beyond this the membranous ductus is strongly extended, then narrowed before bursa copulatrix. A dentate, sclerotized plate at the beginning of ductus bursae. Corpus bursae relatively small, oval, with an agglomeration of spinules in median portion dorsally.

*M. herculanella* resembles in external appearance *M. vinculella* (H.-S.) from which it differs by the darker ground colour, the lack of golden gloss and by less extended but more pronounced pattern. With the aid of genital characters *M. herculanella* is easily recognizable by the presence of signa, dentate sclerite, and spines of corpus bursae. The venation of the forewing resembles that in *M. vinculella* (H.-S.) (SPULER, 1910), only the stalk of  $R_4$  and  $R_5$  is much longer.

**Obesoceras Petersen, 1957**

(Fig. 19—28)

Type-species, *Tinea granulatella* H.-S., 1850.

Forewing with additional vein present, fused with Sc, ending before middle of costa. All radial veins present;  $R_2$  and  $R_3$  stalked. Base of  $R_4$  usually close to base of  $R_5$ . Sometimes  $M_1$  from common stalk with  $R_5$  (*O. confusellum orientale*, *O. hedemanni*). Sometimes one of the median veins absent (*O. granulatellum*, *O. hedemanni*).  $A_1$  does not reach margin and is weak. United portion of  $A_2$  and  $A_3$  long; small portion of these veins free at base. Radiocubital cell narrow and long.

Hindwing with vein Sc to near middle of costa. Radial trunk weak, forming a very narrow long cell together with median trunk. R,  $M_1$  and  $M_2$  from end of cell.  $M_3$  absent. Cubital trunk distally furcate; terminal portions of cubital veins weak. Two anal veins.

The genus includes the following species: *O. granulatellum* (H.-S.), *O. holtzi* (Rbl.), *O. confusellum* (H.-S.), *O. hedemanni* (Rbl.), *O. croaticum* Pet., *O. romanum* Pet., and *O. forsteri* Pet.

Examined material. 1 ♀, *O. granulatellum* (H.-S.); 1 ♂, *O. confusellum orientale* subsp. nov., and 1 ♂, *O. hedemanni* (Rbl.).

Distribution. Italy, Bavaria, Austria, Yugoslavia (Dalmatia, Macedonia), Albania, Greece, and Rumania.

**Obesoceras granulatellum (Herrich-Schäffer, 1850)**

(Fig. 19—20)

Head brown-yellow. Antennae brown-black. Forewing black-brown with yellowish-white costal spots at  $1/3$  and  $2/3$ , respectively; towards dorsum each spot continued as two narrow bands. A small line and two yellowish-white spots in apical area. Hindwing dark brown.

Venation of forewing similar to that in *O. confusellum orientale* subsp. nov., from which it only differs by the lack of median vein and by distant bases of  $R_4$  and  $R_5$ .

Ostium bursae large, surrounding area weakly sclerotized. Ductus bursae narrow at base then strongly dilated. Bursa copulatrix elongate with ten sclerotized signa, shaped as slender dentate rods. Apophyses anteriores furcate, dorsal arm longer than ventral, and with two apical hairs.

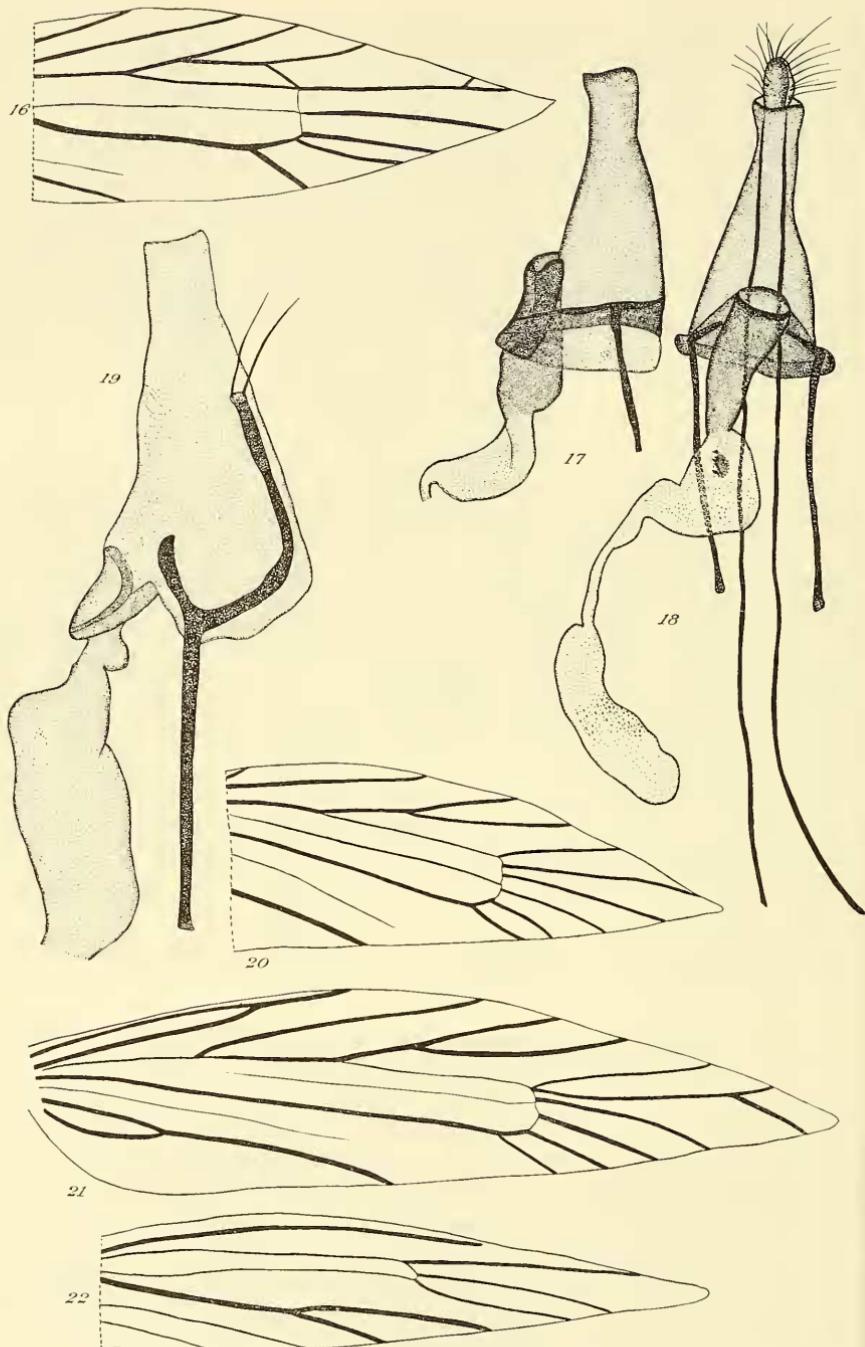


Fig. 16—18. *Meessia herculanella* sp. n., ♀ holotype. 16, venation in distal half of forewing; 17, lateral view of genitalia; 18, ventral view of the same. Fig. 19—20. *Obesoceras granulatellum* (H.-S.). 19, ♀ genitalia; 20, venation in distal half of forewing. Fig. 21—22. *Obesoceras confusellum orientale* ssp. n., ♂ holotype, venation

Examined material. 1 ♀, Rumania, Baile Herculane, Orsova district, Banat Region, 10.VII.1964 (author).

Distribution. Albania, Yugoslavia (Istria, Dalmatia, Montenegro, Macedonia), and Rumania.

*Obesoceras confusellum orientale* subsp. nov.

(Fig. 21—26)

Holotype: ♂, Rumania, Baile Herculane — Mt. Domogled, Crucea Alba, Orsova district, Banat Region (author). GS. no. 955. In the author's collection.

Head yellowish-white; a few brown scales on frontal margin. First antennal joint brown-black, remaining joints yellowish-white with distal narrow brown rings. Labial palpi dirty white; 2nd and 3rd joints distally brown. Forewing with brown-black ground colour, markings, white bands and spots. Oblique transverse band from dorsum near base to half of wing breadth. Small square spot on  $\frac{1}{4}$  of costa continued towards dorsum by three interrupted lines. On middle of costa small rectangular spot continued a little obliquely across wing; two interrupted lines from lateral angles of the spot. In the apical half of wing three narrow, transverse bands obliquely to base of wing. Hindwing blackish-brown.

After a long free portion, Sc of forewing anastomosing with additional vein to before middle of costa. Radial trunk weak, stronger only between bases of  $R_1$  and stalk of  $R_{2+3}$ .  $R_1$  approximately to middle of costa.  $R_5$  and  $M_1$  forming a long stalk, originating close to  $R_4$ .  $R_5$  terminates at costa about twice as far from apex as  $M_1$  is at termen.  $M_2$  and  $M_3$  present.  $A_1$  weak, not reaching dorsum.  $A_2$  and  $A_3$  well marked, free at base, their anastomose twice as long as free parts.

Legs brown with yellowish-white spurs and yellowish-white ringed tarsal joints.

Male genitalia. Tegumen + uncus broad with lateral edges turned inward. Top of uncus bilobed. Vinculum broad, with thick and relatively short saccus. Gnathos unpaired, with curved, dilated and short-spinose apex. Lateral lobes of tegumen short and relatively broad with much narrowed end. Cucullus narrowed, finger-shaped. A strong tooth near middle of ventral margin of valva; dorsal margin hardly concave in middle. Sacculus, a large conical prominence, the margin of which beset with numerous strong short spines. Aedeagus short and thick with a narrowed strongly sclerotized apical portion. One short, dentoid cornutus present.

Female unknown.

*O. confusellum orientale* subsp. nov. is very similar to *O. confusellum confusellum* (H.-S.); however, as the descriptions and drawings of PETERSEN show, there are some distinct differences. Thus externally *O. c. orientale* subsp. nov. differs from *O. c. confusellum* (H.-S.) by having two well-defined costal spots, continued to dorsum as two or three lines and having three stripes towards apex, instead of two indefinite median stripes and one apical spot. Moreover, the ground colour is darker in *O. confusellum orientale*. It is apparent from PETERSEN's key, descriptions, and drawings that in *O. confusellum* (H.-S.) the uncus is not bilobed, as in our subspecies. In *O. c. orientale* the dorsal margin of the valva is more straight while in *O. c. confusellum* it is concave. In the new subspecies the cornutus is situated in the narrowed portion of the aedeagus (in *O. c. confusellum*, in the distal end of the vesica).

Our subspecies fits in PETERSEN's key (1964b: 18—19) as follows:

1. — Posterior margin of the vinculum with a thick, sclerotized, distally pointed rod, about as long as aedeagus . . . . . *O. granulatellum* (H.-S.)
- Posterior margin of the vinculum without a sclerotized rod . . . . . 2
2. — Dorsal edge of the valva with three large crescent-shaped teeth. Aedeagus without cornutus . . . . . *O. holtzi* (Rbl.)
- Dorsal edge of the valva without teeth. Aedeagus with cornutus . . . . . 3
3. — Inner surface of the valvae with a large prominence in basal portion . . . . . 4
- Valvae without prominence on inner surface . . . . . 5
4. — Uncus with top not bilobed. Cornutus in distal end of vesica. Dorsal edge of valva with a slight concavity . . . . . *O. confusellum confusellum* (H.-S.)
- Uncus with top bilobed. Cornutus in distal end of thickened portion of aedeagus. Dorsal margin of valva hardly concave . . . . . *O. confusellum orientale* subsp. nov.
5. — Gnathos distally bilobed, valvae tapering, finger-like. Aedeagus short, about as long as valva . . . . . 6
- Gnathos distally not bilobed, valvae dilated apically with sharp, arc-shaped teeth. Aedeagus slender, longer than valva . . . . . 7
6. — Uncus with a faint median split. Valvae slightly rounded ventrally . . . . . *O. hedemanni* (Rbl.)
- Uncus distally furcate; valvae nearly rectangular in basal part tapering towards tip, finger-like . . . . . *O. forsteri* Pet.
7. — Ventral edge of valva with one strong and one weak dent. Aedeagus shorter than distance between uncus and end of saccus . . . . . *O. romanum* Pet.
- Ventral edge of the valva with a large dent exceeding breadth of valva. Aedeagus as long as distance between uncus and tip of saccus . . . . . *O. croaticum* Pet.

*Obesoceras hedemanni* (Rebel, 1899)

(Fig. 27—28)

The venation in this species is similar to that in *O. confusellum orientale* subsp. nov., from which it differs by a shorter stalk of  $R_5$  and  $M_1$ , by the distance between apex of wing and end of  $R_5$  on costa being half the distance between wing apex and end of  $M_1$ , as well as by the absence of a median vein.

Examined material. 1 ♂, southern Tyrol, Bozen (S. TOLL).

Distribution. Northern Italy.

*Gozmanytinea* gen. nov.

(Fig. 29—31)

Type-species, *Infurcitinea captans* Gozmany, 1960.

Vein Sc of forewing to before middle of costa. Radial trunk weak to base of  $R_1$ . All radial veins to costa.  $R_1$  and  $R_2$  with ends curved towards base of wing;  $R_4$  and  $R_5$  stalked.  $M_2$  and  $M_3$  curved downwards.  $Cu_1$  curved upwards.  $A_1$  weak; its end on wing edge slightly better defined.  $A_1$  and  $A_2$  free at base. Hindwing

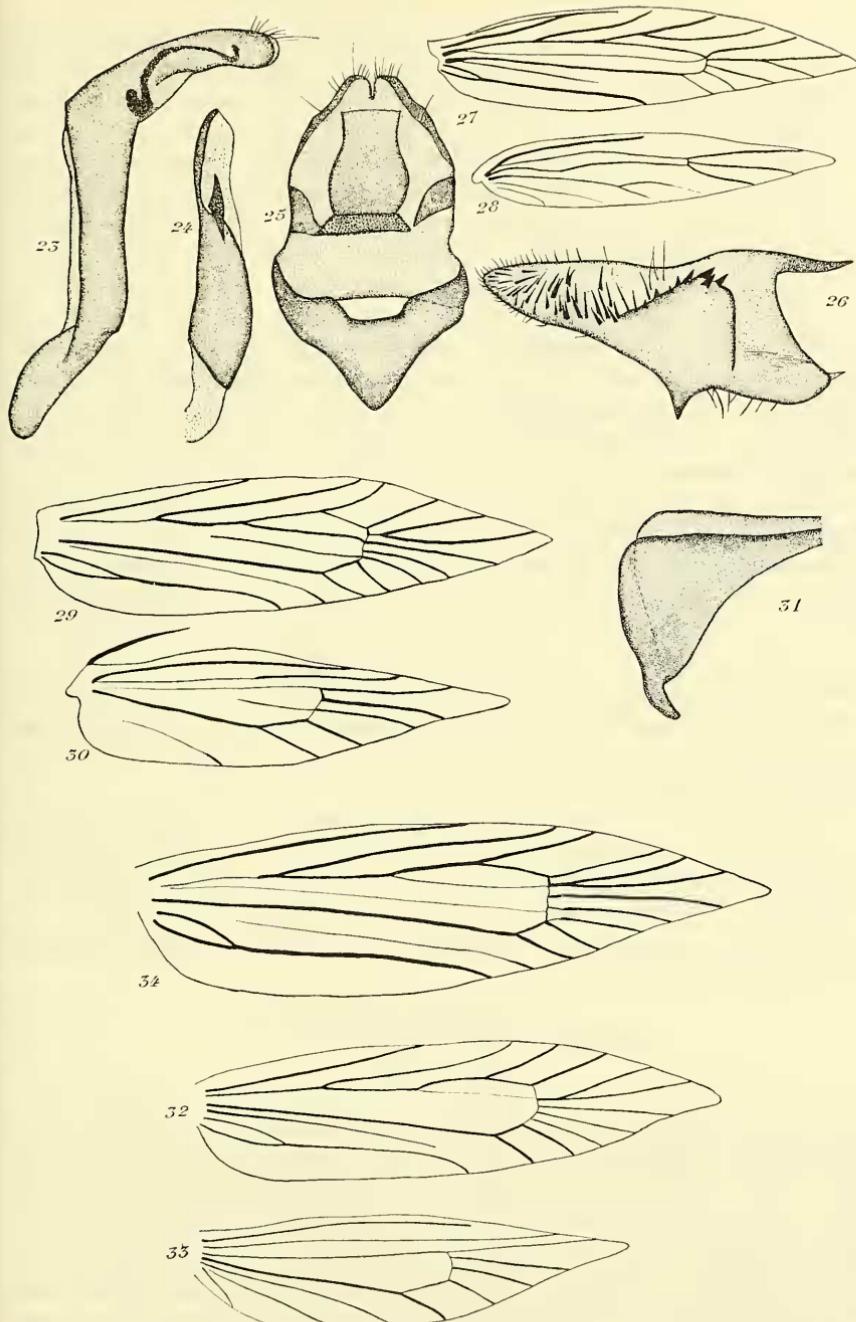


Fig. 23—26. *Obesoceras confusellum orientale* subsp. n., ♂ holotype. 23, lateral view of genitalia without aedeagus; 24, lateral view of aedeagus; 25, genitalia without aedeagus in ventral view; 26, inner surface of right valva. Fig. 27—28. *Obesoceras bedemannii* (Rbl.), venation. Fig. 29—31. *Gozmanytinea captans* (Gozm.), ♂ paratype. 29—30, venation; 31, vinculum, lateral view. Fig. 32—33. *Infurcitinea ignicomella* (H.-S.), venation. Fig. 34. *Infurcitinea romanica* sp. n., ♀ allotype, venation of forewing

with costa rounded-prominent; Sc to beyond middle. R free from cell, its basal half weak. Median trunk weak.  $M_1$  and  $M_2$  curved downwards. Cubital veins relatively long. Cubital trunk strong. Only distal end of anal vein defined. Anal field broad.

The male genitalia are characterized by the symmetry of all the parts. Tegumen + uncus long, relatively narrow with lateral edges turned inwardly. Vinculum broad, with a single tip. Valvae basally broad, narrowing apically, narrowed portion with numerous basad directed hairs. Near the base of the costa there is a process which can be short (*G. banatica*), or long (*G. captans*) or furcate (*G. albanica*, *G. kasyi*, and *G. litochorella*). Aedeagus rather short, straight, with a small dilatation basally, broadened distally, usually with two small tips. Anellus cuff-shaped, membranous, with minute dentations, without sclerotized projections or hairy arms, as in *Infurcitinea* Spuler.

The female genitalia are known in a few members of the genus only (*G. captans* and *G. banatica*).

*Gozmanytinea* gen. nov. is very similar to *Infurcitinea* Spuler, having a similar venation. Our genus differs from the latter chiefly by the characters of the genitalia; in *Gozmanytinea* the genitalia are symmetrical, in *Infurcitinea*, asymmetrical; the vinculum in the new genus has a single tip, instead of two as in *Infurcitinea*; the anellus is in the shape of a membranous denticulate cuff, without projections, while in *Infurcitinea* this part bears projections or hairy arms.

Althought the venation is not differing from that in *Infurcitinea* and only slightly differing from that in *Lichenotinea*, I consider the group of species assigned to *Gozmanytinea* to represent a distinct unit showing a separate line of evolution, judging from the genital characters.

I have assigned the following species to *Gozmanytinea*: *G. captans* (Gozm.), *G. banatica* (Pet.), *G. albanica* (Pet.), *G. kasyi* (Pet.), and *G. litochorella* (Pet.).

Examined material. 1 ♂, *G. captans* (Gozm.) paratype<sup>1</sup>); 1 ♂, 1 ♀, *G. banatica* (Pet.).

Distribution. Albania, Greece, Yugoslavia, Rumania, northern Tyrol, Engadine, Wallis, south-eastern France.

*Gozmanytinea banatica* (Petersen, 1961)  
(Fig. 35—36a)

Head white, the base of antenna with light brown scales. First joint of antenna yellowish-white, basal joints of flagellum white, apical joints dark brown. Labial palpi white, second joint with a light brown diffuse ring. Maxillary palpi white. Thorax white with sparse maroonish scales. Ground colour of forewing yellowish-white, markings maroon-brown; points scattered over wing. Cilia white. Anterior legs brown with narrow white rings; middle and posterior legs maroon-white.

Female genitalia. Sternite VIII consisting of two plates, triangularly narrowed medially. Ostium bursae relatively broad, subrectangular with a notch in posterior margin. Ductus bursae long, narrow. Corpus bursae ovoid, constricted at the end

<sup>1</sup>) To the kindness of Dr. L. GOZMANY I owe material of this species received for study.

of ductus bursae. Apophyses anteriores rather long, with a strong spine at posterior end on internal margin. Apophyses posteriores long.

Examined material. 1 ♂, Rumania, Topolnita grotto at Ciresu, Turnu Severin district, Oltenia Region, 26.VI.1962 (V. DECU); 1 ♀, the same locality, 27.VI. 1964, GS. no. 953 (author). In the author's collection.

Distribution. Albania, Yugoslavia (Macedonia), and Rumania.

**Infurcitinea Spuler, 1910**  
(Fig. 32—34, 37—43)

Type-species, *Tinea argentimaculella* Stainton, 1849.

Sc of forewing ending before or in middle of costa. Radial trunk weak basally. Radial veins terminating on costa.  $R_4$  and  $R_5$  short-stalked. Cubital trunk and two cubital veins well-defined throughout.  $A_1$  does or does not reach wing edge (*I. ignicomella*); sometimes its terminal portion more defined than remaining portion (*I. romanica* spec. nov.).  $A_2$  and  $A_3$  with a short free portion, then united.

Sc of hindwing long, to middle of costa. The radial trunk free of cell. The radial trunk and R weak. Three median veins present. Median trunk and  $M_1$  weak.  $M_1$  to costa twice as near to apex as distance of end of  $M_2$  to apex. Cubital trunk well-defined. The three anal veins weak.

*Infurcitinea* Spuler includes about 40 species.

Examined material. Rumania, 1 ♂, *I. ignicomella* (H.-S.), Bucuresti, 28.VI. 1962 (author); 1 ♂, *I. rumelicella* (Rbl.), Baile Herculane, 8.VII.1964 (author); 1 ♂, *I. albicomella* (H.-S.), Ineu, Arad district, Banat Region (L. DISZEGHY); Greece, 1 ♂, *I. olympica* Pet., Mt. Olympus (G. PETERSEN coll.<sup>1</sup>), leg. F. KASY. Rumania, 1 ♂, 2 ♀, *I. romanica* spec. nov., Ciresu, Turnu Severin district, Oltenia Region (V. DECU).

Distribution. England, Iberian Peninsula, southern France, Central Europe, Italy, Corsica, Sardinia, Yugoslavia, Greece, Bulgaria, Rumania, USSR (Caucasus), Iran, Pakistan, Afghanistan, Palestine, Tunisia, Algeria, Morocco.

**Infurcitinea romanica** spec. nov.  
(Fig. 34, 37—40)

The material has been collected in Topolnita grotto at Ciresu, Turnu Severin district, Oltenia Region, and is preserved in the author's collection. Holotype, ♂, 26.VI.1962 (V. DECU), GS. no. 893; allotype, ♀, 27.VI.1964, GS. no. 954; paratype, 1 ♀, 27.VI.1964 (author).

Head white. First antennal joint yellowish-white with scarce brown scales. Joints of flagellum blackish-brown, with narrow, white basal rings. Labial palpi blackish-brown basally, yellowish-white apically; their outer surface blackish-brown, inner surface white. First two joints of maxillary palpi black-brown, remainder white, densely mixed with brown. Thorax and tegulae white mixed with scarce black-brown scales. Ground colour of the forewing white, markings black-brown scat-

<sup>1</sup>) I owe the loan of the material of this species to the kindness of Dr. G. PETERSEN.

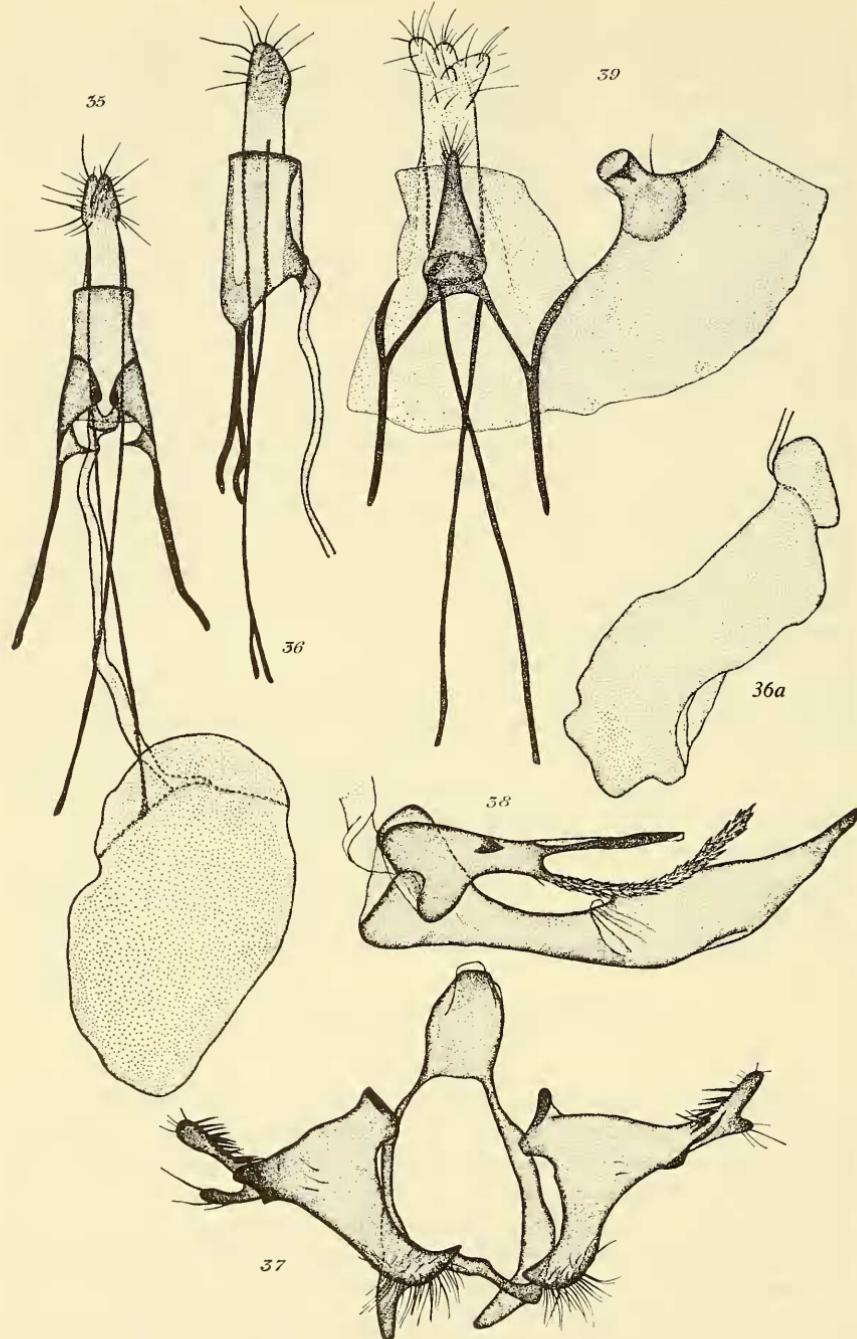


Fig. 35—36a. *Gozmanytinea banatica* (Pet.), ♀ genitalia. 35, ventral view; 36—36a, lateral view. Fig. 37—39. *Infurcitinea romanica* sp. n. 37, ♂ holotype, genitalia without aedeagus and anellus; 38, the same, aedeagus and anellus; 39, ♀ allotype, dorsal and ventral views of the genitalia

tered points. Fringes white. Venation as in the genus. Hindwing brown-grey; fringes dirty white.

Male genitalia. Tegumen + uncus relatively broad, slightly narrowing towards end. Vinculum narrow with two rather long processes. Valvae very broad at base, strongly narrowed towards apex, asymmetrical. Left valva with two rather long, slender, club-like arms, ventral somewhat shorter, dorsal with strong, rigid hairs. Bases of these arms with oblique, transverse, sclerotized ridges with distal edges slightly concave. Right valva more abruptly narrowed with short apical processes; dorsal margin of narrowed portion with strong rigid hairs; internal surface at the narrow part with a bilobed ridge, longer than in left valva, obliquely longitudinal. Bases of valvae ventrally covered with dense hairs. Anellus shaped as a plate with a strong constriction beyond a broad base; it is dilated again from middle, tapering apically. Aedeagus slender and narrow, strongly dilated at base, divided before middle in a straight, pointed arm and a curved, longer arm, covered with dense broad spines.

Female genitalia. Eighth segment ventrally with a sclerotized tube, dilated distally, upon which lays the ostium; dorsally with a sclerotized triangular body haired apically. Apophyses anteriores rather short with furcate posterior parts, arms dorsally united. Apophyses posteriores long. Anal papillae haired.

*I. romanica* spec. nov. resembles *I. olympica* Pet. but differs both externally and internally. In the former the first antennal joint is yellowish-white, in the latter brown-white. The labial palpi in *romanica* are black-brown externally, in *olympica* only the base of the third joint is brown. The black-brown dots of the forewing are more numerous in *olympica* than in *romanica*.

**Infurcitinea olympica** Petersen, 1959  
(Fig. 41—43)

Male genitalia. Tegumen + uncus relatively broad, distally rounded. Vinculum narrow with two rather long thick tips. Left valva with rather short apical process more dentate along ventral edge. Right valva relatively broad in constricted portion, with rather thick processes. The anellus tapers abruptly beyond middle into a long, strong well-sclerotized, curved spine. Both arms of the aedeagus of equal length, running parallel; one arm is provided with sparse spines. Lamella of the right valva transverse.

The shape and position of the lamellae of the valvae and the remaining genital characters are entirely different in *I. olympica* and in *I. romanica* (for comparison see above).

Examined material. 1 ♂, Greece, Mt. Olympus (G. PETERSEN coll., leg. F. KASY, GS. no. 1169). In the author's collection.

**Lichenotinea** Petersen, 1957  
(Fig. 44—45)

Type-species, *Tinea pustulatella* Zeller, 1852.

Vein Sc of forewing to beyond middle of costa. Basal portion of radial trunk weak. Radial veins ending on costa;  $R_4$  and  $R_5$  stalked. Three median and two

cubital veins.  $A_1$  weak throughout, reaching edge.  $A_2$  and  $A_3$  free at base then forming a long common trunk.

Sc of hindwing to beyond middle of costa; radiocubital cell open. Radial trunk weak throughout. Three median veins.  $M_1$  and  $M_2$  close at base. Cubital trunk well-marked, with two cubital veins. All anal veins absent.

Two species belong in *Lichenotinea* Pet., viz. *L. pustulatella* (Zll.) and *L. maculata* Pet.

Examined material. 3 ♂, Rumania, cave no. 2, Motru Sec at Calugareni, Gorj district, Oltenia Region, 16.VII.1961 (A. BALACESCU); 9 ♂ and 2 ♀, Topolnita cave at Ciresu, Turnu Severin district, Oltenia Region, 27.VI.1964 (author) (*L. pustulatella*).

Distribution. Central and southeastern Europe, Asia Minor.

*Ischnoscia* Meyrick, 1895  
(Fig. 46—47)

Type-species, *Guenea borreonella* Miliere, 1874.

Sc of the forewing to before middle of costa. Radial trunk weak throughout.  $R_2$  and  $R_3$  long-stalked;  $R_4$  and  $R_5$  short-stalked. Free portion of  $R_4$  short, not reaching edge. Stalk of  $R_4 + R_5$  and a small basal portion of the two existing median veins weak. Cubital trunk well-defined, with two cubital veins.  $A_1$  reaching edge but weak;  $A_2$  well-defined;  $A_3$  absent. Radiocubital cell narrowed and long.

Sc of the hindwing to beyond middle of costa. Radial trunk weak, but R well-defined. Two median veins. Cubital trunk well-marked, distally with two cubital veins. There is no cell proper but a weak vein from base of cubital trunk to the radial trunk towards its end, outlining a rudimentary cell.

The genus has two species, *I. borreonella* (Mill.) and *I. pandorella* (Mill.).

Examined material. Rumania, 1 ♂, 29.VIII.1964, cave beyond Cîrsa — Carasova community, Anina district, Banat Region (St. NEGREA) (*I. borreonella*).

Distribution. England, North Spain, France, southwestern Germany, Rumania.

*Novotinea* Amsel, 1938  
(Fig. 48—49)

Type-species, *Tinea muricolella* Fuchs, 1879.

Sc of the forewing very short, ending before  $1/3$  of costa. Four radial veins present. Radial trunk furcate into two radial veins. Other two radial veins free. Radiocubital cell open. Two median veins. Two cubital and one median vein from cubital trunk. One short anal vein.

Sc and cubital veins of the hindwing absent. Radial trunk together with the cubital trunk forming a very narrow and rather short cell. R stalked with one of the two median veins present. Two anal veins present, of which one very short.

Six species belong to the present genus, viz. *N. muricolella* (Fuchs), *N. carbonifera* (Wlsm.), *N. liguriella* (Ams.), *N. klimeschi* (Rbl.), *N. fasciata* (Stgr.), and *N. andalusiella* Pet.

Distribution. Western Germany, Spain, Corsica, Sardinia, Italy, Yugoslavia (southern Dalmatia), and Asia Minor.

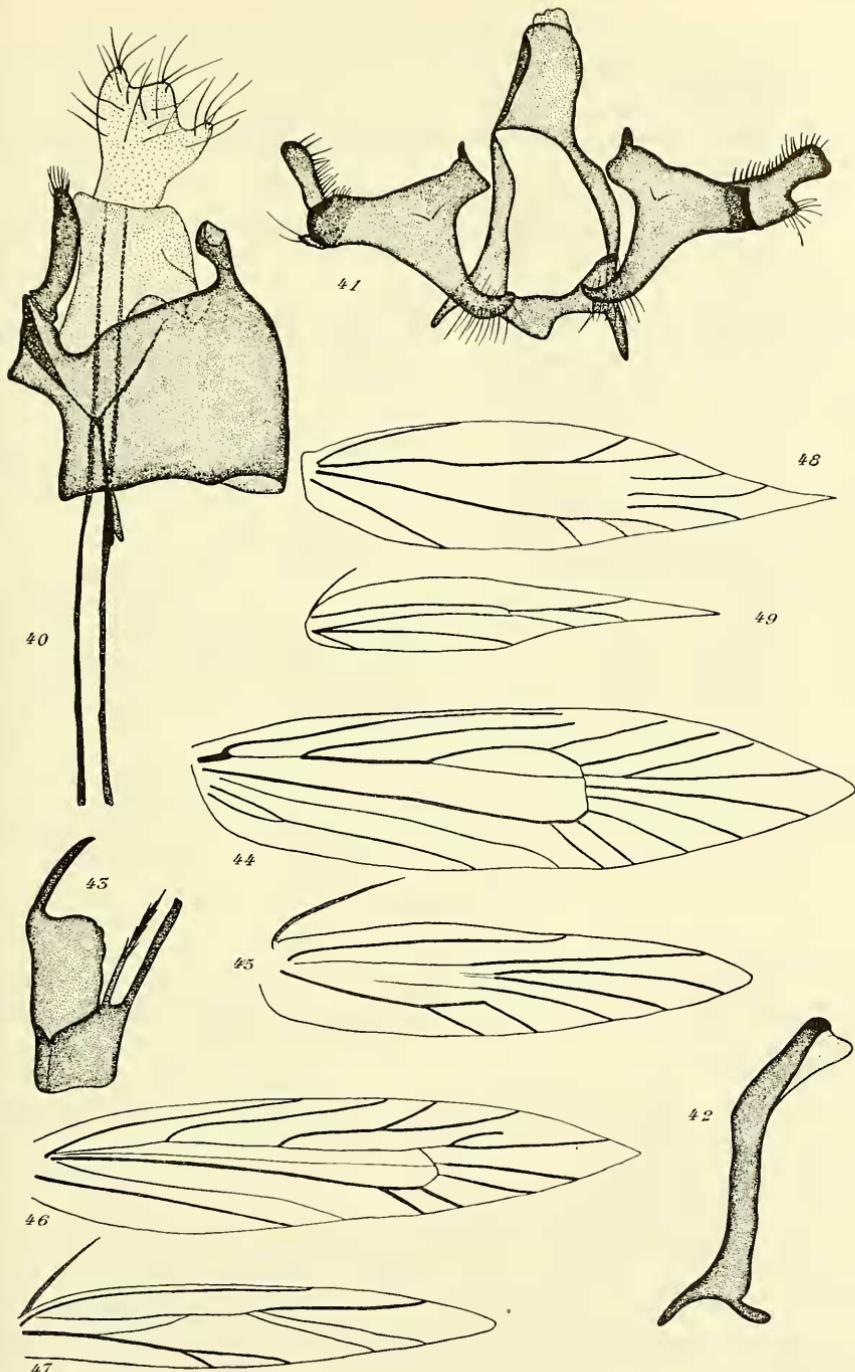


Fig. 40. *Infurcitinea romanica* sp. n., ♀ allotype, lateral view of genitalia. Fig. 41—43. *Infurcitinea olympica* Pet. 41, ♂ genitalia without aedeagus and anellus; 43, the same in lateral view; 42, the same, aedeagus and anellus. Fig. 44—45. *Lichenotinea pustulatella* (Zll.), venation. Fig. 46—47. *Ischnoscia borreonella* (Mill.), venation. Fig. 48—49. *Novotinea muricolella* (Fuchs), venation (after Amsel)

## KEY TO THE GENERA OF MEESSIINAE ACCORDING TO VENATION 1)

1. — Hindwing with Sc present . . . . . 2
- Hindwing with Sc, one median vein, cubital veins and one anal vein absent. Forewing with Sc very short; one radial vein, one cubital vein and two anal veins absent . . . . . *Novotinea* Ams.
2. — Forewing with Sc normally shaped . . . . . 3
- Forewing with Sc distally fused with an additional vein, both free at base . . . . . *Obesoceras* Pet.
3. — Forewing with cubital veins present . . . . . 4
- Forewing with cubital veins absent. In hindwing cell open; base of radial trunk not distinct; two median veins present, all anal veins absent . . . . . *Celestica* Meyr.
4. — Forewing with five radial veins . . . . . 5
- Forewing with four radial veins;  $M_1$  and  $M_2$  stalked;  $A_1$  weak,  $A_2$  very short. One anal vein absent in hindwing . . . . . *Lichenovora* Pet.
5. — Forewing with all radial veins free . . . . . 6
- Forewing with some of the radial veins stalked . . . . . 7
6. — Hindwing with two weak anal veins . . . . . *Phereoeca* Hint. & Brad.
- Hindwing with one weak anal vein . . . . . *Agnathosia* Ams.
7. — Forewing with  $R_2$  and  $R_3$ , as well as  $R_4$  and  $R_5$ , stalked;  $R_4$  short, not reaching margin; one median and one anal veins absent. All anal veins and one median vein absent in hindwing . . . . . *Ischnoscia* Meyr.
- Only  $R_4$  and  $R_5$  stalked . . . . . 8
8. — Hindwing with cell closed, the radial or the cubital trunk does not participate in building of the cell; not all anal veins absent . . . . . 9
- Hindwing with cell open; all anal veins absent . . . . . *Lichenotinea* Pet.
9. — Radial trunk does not participate in building of the cell in hindwing . . . . . 10
- Cubital trunk does not participate in building of the cell in hindwing . . . . . *Meessia* Hofm.
10. — Forewing with  $A_1$  weak, not reaching margin. All anal veins present in hindwing . . . . . *Infurcitinea* Spul.
- Forewing with  $A_1$  weak, reaching margin. Two anal veins absent in hindwing . . . . . *Gozmanytinea* gen. nov.

## KEY TO THE GENERA OF MEESSIINAE, ACCORDING TO THE MALE GENITALIA

1. — Gnathos present . . . . . 2
- Gnathos absent . . . . . 5
2. — Gnathos consisting of two arms . . . . . 3
- Gnathos not paired . . . . . 4
3. — Arms of gnathos without base, distally joined, saccus dilated . . . . . *Montetinea* Pet.
- Arms of gnathos on a distinct base, distally not joined; saccus not dilated . . . . . *Phereoeca* Hint. & Brad.

<sup>1)</sup> The genera *Montetinea* Pet. and *Tineiforma* Ams. are not included in the present key as their venation is unknown to me.

4. — Uncus ending in two lobes; hardly ending in a rounded-clavate lobe when a prominence on internal surface of the valva is present; saccus short . . . . . *Obesoceras* Pet.  
 — Uncus always ending in a single tip, usually acute, scarcely rounded; saccus long . . . . . *Meessia* Hofm.

5. — Vinculum very broad, aedeagus short; saccus absent . . . . . 6  
 — Vinculum not so broad, aedeagus long; saccus present . . . . . 7

6. — Uncus not distinct; valvae complete, basally dilated; anellus simple . . . . . *Lichenovora* Pet.  
 — Uncus distinct, acute; valvae deeply divided into two portions; anellus complicated . . . . . *Lichenotinea* Pet.

7. — Uncus consisting of two bases, with strong, long hairs *Celestica* Meyr.  
 — Uncus consisting either of a plate or of two lobes . . . . . 8

8. — Uncus consisting of two lobes . . . . . 9  
 — Uncus consisting of a plate . . . . . 10

9. — Tegumen narrow; valva with a ventral long, strong arm; aedeagus with an external very strong cornutus . . . . . *Ischnoscia* Meyr.  
 — Tegumen broad; valva without a ventral arm, sometimes with a small prominence; aedeagus with internal cornuti . . . . . *Novotinea* Ams.

10. — Vinculum broad with a long saccus; aedeagus simple, slender, long; anellus roughly horseshoe-shaped . . . . . *Agnathosia* Ams.  
 — Vinculum narrow with a simple or double tip; aedeagus complicated, short; anellus of diverse shape, usually very complicated . . . . . 11

11. — Anellus very complicated and developed; valvae asymmetrical; vinculum with two tips . . . . . *Infurcitinea* Spul.<sup>1)</sup>  
 — Anellus cuff-shaped, weakly developed; valvae symmetrical; vinculum with one tip . . . . . *Gozmanytinea* gen. nov.

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<sup>1)</sup> Here belongs probably also *Tineiforma* Ams.

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